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ABSTRACT

The Connecticut Distance Learning Consortium (CTDLC) provides its 32 members with Information Technologies (IT) services including a portal Web site, course management software, course hosting and development, faculty training, a help desk, online assessment, and a student financial aid database. These services are supplied to two- and four-year institutions, both public and private. The $2.5 million budget comes mostly from the legislature, as well as from fees. This paper describes the IT services, infrastructure, budget, and successes of the CTDLC with the aim of providing a model for schools looking to expand their learning technologies while containing costs of development and maintaining pedagogical effectiveness. Discussion focuses on detailing services, costs, growth rate, and future plans of the CTDLC, and concludes with advantages to using a consortial approach to IT development. An appendix charts the increase in number of distance learning courses from the 1997-1998 to 1999-2000 academic years. (AEF)

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Consortial IT Services: Collaborating To Reduce the Pain

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The Connecticut Distance Learning Consortium provides its 32 members IT services including a portal web site, course management software, course hosting & development, faculty training, help desk, online assessment, and a student financial aid database. The Consortium is a model for expanding learning technologies while containing costs and maintaining effectiveness.

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Those of us in higher education working in Information Technologies (IT), all live, in the words of the ancient Chinese curse, in interesting times. The importance of IT services to higher education is rapidly increasing; this means our authority, budget, and staff is growing. But at the same time we are struggling with the problems familiar to our brethren in industry—staffing, maintaining current services, and rolling out new services. But unlike our brethren in the for-profit sector, we struggle to arrange "venture capital" to underwrite dramatic upgrades to our infrastructures. Since most of us work for non-profits, we make arguments for new resources based on increases in efficiency and desperate need.

Now along comes distance learning with a whole new set of IT needs, including many that require personnel. These new opportunities are hard to describe as either an increase in our efficiency or as 'desperate' need. What they represent are classic opportunities for our industry to re-organize and expand its delivery mechanisms and services. In other words, distance education is the sort of innovation that requires re-capitalization for higher education. So the question we face is at least partly financial: How can higher education fund emergent IT services like the new technologies associated with web-based distance learning? However, the question also raises administrative issues. How can we efficiently deliver those services? And what do those services look like? One answer to both the financial and administrative questions that I am proposing is consortial IT services, a 'share the pain' approach.

By "consortial IT," I mean a small organization designed to be collaborative, with the mission and resources to create solutions for emerging IT needs. According to Christensen in "*The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail,*" creating a small, dedicated organization to deal with "disruptive innovation" is one way for an established industry to manage new products with new markets.[1] He argues that such a focused organization can succeed because it will measure itself by the degree to which others adopt its solutions. The success of an IT consortium should arise from its focus, and its attention to the details associated with managing "disruptive innovation." This has been the key to understanding Connecticut's IT consortium.

The Connecticut Distance Learning Consortium

This presentation will describe the IT services, infrastructure, budget and successes of the Connecticut Distance Learning Consortium (CTDLC) in the hope of providing a model for schools looking to expand their learning technologies while containing the costs of development and maintaining pedagogical effectiveness. The talk will detail our services, costs, growth rate, and future plans. The discussion will finish with the advantages to using a consortial approach to IT development.

For three years, the Connecticut Distance Learning Consortium has provided its 32 member institutions IT services including a web site, marketing, course management software, course hosting, course development, faculty training, help desk support, online student assessment, a student financial aid database, and more. These services are supplied to two-year and four-year

schools, both public and private. The $2.5 million dollar budget comes mostly from the legislature, as well as fees and services.

In the past academic year the State of Connecticut offered 13 online programs, specifically 325 courses to over 4,000 students. The chart below tracks the growth of distance education in Connecticut over the past three years, and as one might expect, that growth rate has been dramatic. But it is the services that surround web-based learning that have turned out to be the most critical to this growth.

The first Consortial IT challenge was to produce a web site that could serve as Connecticut's hub for all distance education information. What followed from this decision is that Connecticut supports a central web site for student information about programs, courses, registration, etc. that is hosted by the CTDLC. Because such a site was agreed to and produced, the CTDLC has been able to market for all its members using this central site, making the first significant collaboration between the consortial members the joint marketing of their courses and programs. While it is web technology that makes such a venture practical, it the administrative change that such cooperation represents that is most notable. Schools now recognize the need to supply an outside organization with information about their courses and programs.

On the technical front, the CTDLC used the need to deliver course and program information to develop an online database to collect information from visitors that we pass back to our members so they can market directly to these potential students. Here is an example of how a group approach to IT development paid dividends. The CTDLC began advertising the offerings of its members and then developed a sophisticated tracking system to explore the traffic that we were creating. Building our web site led to a technical innovation that serves the whole community. Once the Connecticut General Assembly understood how this worked, they increased our funding for marketing to $150,000 per year.

Our second, simultaneous technical challenge was to create a course delivery infrastructure—servers, course management software, server hosting, technical support, and a help desk for student and faculty. The General Assembly wanted to build such an infrastructure once and let all of higher education share it as needed. We were able to approach these decisions without the added complication of imagining how such system would integrate with existing systems (this occurred three years ago and things have gotten more complicated since then). While no one was forced to use the CTDLC infrastructure, the legislature refused to fund any requests for individual infrastructure from particular systems. The result of this plan is that the CTDLC is able to provide a robust and developing support structure for its partner schools, including such items as a 7-day help desk, learning design, faculty training, and technical support.

From a management perspective, distance learning is the business of the CTDLC, so attention to technical detail and improvement of the infrastructure occurs constantly. In other words, the focus of the organization is on the particular technologies and processes associated with distance learning. The resulting improvements are available to all members, which in theory means that 32 IT departments are not forced to find the resources to address distance learning. This approach had no trouble winning funding from the Connecticut legislature because it means that

higher education is working to avoid duplication of services—one of our legislatures criticisms of our industry.

How to Build A Funding Argument For Your Legislature

The argument we used to establish the CTDLC and begin delivering consortial IT went as follows. The emphasis in the IT departments of our member schools is the reliable delivery of established services. It is challenging to provide emergent technologies that require experimentation, user education, and new infrastructures but offer little return on investment. In other words, the new technologies that support distance education are expensive and labor intensive but not financially rewarding, at least at the outset. Providing these emergent technologies is even more difficult because these services are connected with mission critical administrative decisions, require substantial time before they reach enterprise level, and demand new IT skills. For example, new Course Management Systems (CMS) will be used by large number of faculty, so they will quickly become a "routine' part of the higher education computing tool set. In addition, schools that have used them for a while are discovering that they need to link their CMS to the administrative database for purposes of registration, payment, and financial aid. This means that those who are making decisions about "learning technologies" must interface with those responsible for "administrative technologies." This conversation alone is probably aging many of you prematurely.

Our proposal was to develop a consortium to provide wide-ranging access to such technologies as web-accessible databases, online course management software, and distance delivered student services. This approach can share the costs across budgets thereby reducing the start-up price to any single institution, empower wide-ranging experimentation by multiple schools, and concentrate specialized IT skills in a single place.

As higher education confronts the challenges and opportunities provided by the communication revolution, it is exploring the idea of outsourcing some of its activities. Consortial IT is a way of outsourcing developing technologies to a 'vendor' that is operated by the consortial members. In this way, higher education can experiment with unbundling its services while not completely letting go.

The Connecticut Distance Learning Consortium was founded with just such a model in mind. Our first services were faculty training and courseware production. Our startup budget was $30,000 in Sloan Foundation money, $30,000 for our Community College, and human resources from Charter Oak State College. We bought, installed and operated a course delivery system (in our case, we used WebMentor® from Avilar). We hired a server hosting company, bought hardware (one server), a license ($15,000) and went to work.

In year two our legislature created our first budget of $200,000. This grew to $523,000 in the next year and $2.5 million in the current year. These dramatic increases in funding occurred because the Connecticut General Assembly viewed the CTDLC, to use the phrase of Mary Beth Susman, Director of Kentucky Virtual University, as a "utility." Resources could be poured into the CTDLC and services and grants would flow out. Since most state agencies have a budget that reflects the services they are expected to perform (and this includes educational institutions), it is

difficult for them to cobble together sufficient dollars to create new services. The CTDLC did not have an historically defined set of services, so in a very real sense, this made the CTDLC an institution where the State could create invest capital.

The Advantages of Consortial IT

Clearly, *the first advantage of Consortial IT is collaborative begging.* Since all schools must approach their legislatures for money, often for projects that seem redundant, asking for common dollars to support a common infrastructure appealed to Connecticut's General Assembly. In other words, the argument that technology, all of which is state-supported for public institutions, should be used to achieve competitive difference between schools is a losing argument. Instead, we argued that technology should be considered part of the playing field and that large difference between schools was evidence of poor management.

Putting the state's distance education resources in one place and letting the entire higher education community—public and private--share in those resources was a winning argument. The idea that a State will make one investment that can be shared by all will strengthen the likelihood of funding. Asking for resources with one voice will also supply evidence that higher education is approaching re-capitalization from the standpoint of state investment in a critical industry rather than individual investments in particular institutions (as familiar as this sort of lobbying may be).

The opportunity for our members to use this technology almost without cost permitted several to begin creating their distance learning programs without worrying about investment. Instead they could concentrate on the hard work of administration—finding faculty, registering students, marketing, etc. The CTDLC underwrote the cost of the infrastructure, but more importantly, it made the software decisions, and incurred the inevitable risk of deciding wrongly. *Here is the second advantage of consortial IT—plausible deniability.* Difficult decisions can be made on an experimental basis without the associated career implications for being wrong or premature.

Teikyo Post University, a small independent college, best illustrates the success of this approach. One year after the creation of the CTDLC they mounted 18 courses for 317 students. Within two years they produced one Associate and five Baccalaureate degrees, and during the 1999-2000 academic year they served 1500 students. As the chart of course offerings reveals (see Appendix A), the growth rate for the entire Consortium was even more dramatic.

A third opportunity created by a consortial approach to IT arrives in the form of experimentation. One of the challenges to IT is the need to create temporary solutions to problems while we wait for the large vendors to create more robust solutions. A case in point: the Connecticut Distance Learning Consortium was chosen as one of 15 participants in the US Department of Education's Demonstration Program in Title IV financial aid for distance students. The existence of the CTDLC made the state a candidate for the program, and the perfect place to solve problems (or meet challenges) concerning inter-institutional registration and distributing financial aid to online students. The CTDLC was already surveying its online students to discover their demographics, expectations, satisfaction, etc. Participants in the Demonstration Program were required by the Department to survey their distance students about

some specific questions. The CTDLC saw this as an opportunity to use IT to address a common problem, so using Cold Fusion and Access we designed an automated questionnaire that our Institutional Researcher can collect data and issue reports for the 25 participants in the Program. Even the most technically adept members of the CTDLC were not prepared to address this problem, and they certainly could not produce a solution for 25 different institutions. However, that is exactly what was required and increasingly what distance learning requires of IT.

In addition, this project required us to create an online database to serve as a clearinghouse for tracking student enrollments in multiple institutions. Distance students enroll at a "home" institution but routinely use courses from "host" institutions. We needed to supply a way for the financial aid departments at our schools to track the academic progress of these students because none of the administrative systems—including the National Student Loan Clearinghouse—can do that right now. This illustrates how a consortial approach to IT can delegate small but widely felt problems to an organization with the resources and motivation to develop working solutions. When facing emerging challenges, we must offer services before robust solutions have emerged from large vendors. This is an area that concerns many in IT because such solutions require reallocating resources away from the core services that our departments are charged with supplying.

A fourth area of development is part of the reason I am here today. *A consortial approach to systems development brings together the IT planning folks at multiple institutions and links them to what is developing across the country.* These conversations are driven by the experiments that the consortial entity conducts, which become part of the research and development process for the members. The consortial IT group becomes a skunk works for its members, working with news systems and approaches before they are battletested and sharing the wisdom gained from that pain with the larger membership.

For example, we are currently working with a 12-institution system to develop the Application Programming Interface (API) to connect one Course Management System (BlackBoard) to their Administrative software (SCT Banner). The System's entry into distance education has not been "systematic." Instead, schools have individually developed capacity at different rates, using a variety of course management systems (including those of the CTDLC), and without much thought to integrating those systems into their administrative software. The problem is potentially huge, and the need to address it is pressing. But the System is distracted by the effort it takes to finish the implementation of their administrative software, and the schools do not have much voice in system-wide IT decisions. The CTDLC is taking the initiative—and the risk—of building a pilot solution to demonstrate how this process can work.

In the process we are collecting information about how this is being handled in other places, what the choices involve, and what the price is (financial and administrative). We are making purchases, mounting the learning curve, and sharing our hard won wisdom. Our work increases our value as a partner while it grows our expertise, so the project is a "win-win" for both the System and the CTDLC.

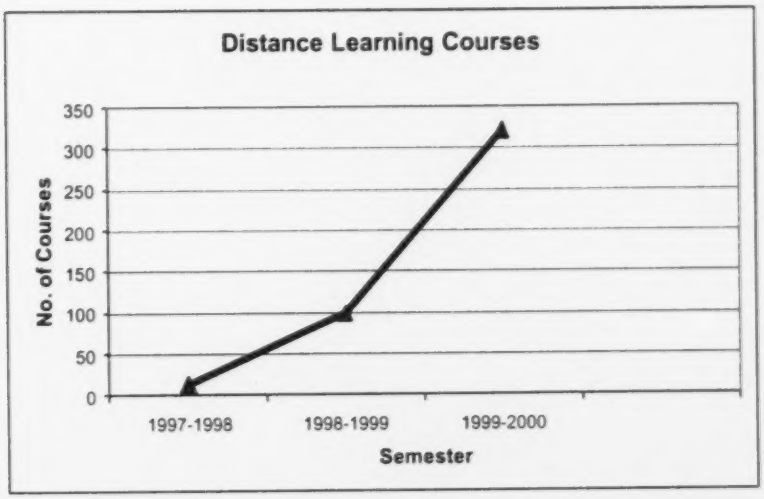
Conclusion

In conclusion, the need for IT services in higher education continues to grow, and the cost for these services also continues to increase. Established IT departments are struggling to address emerging issues created by distance education because these problems often require "customized" solutions, administrative changes, venture capital, and even mission changes. To add to the difficulty, the new economy is challenging higher education to "unbundle" its services, and IT is being asked to play a role in the deployment of new services, the reorganization of a beloved delivery system, and the unbundling of services that have never been outsourced. Consortial IT is a method for managing the expense, risks and creativity such challenges represent. Banding together to manage the change process will be seen as a positive step by state legislatures, and it will certainly represent a field trial of the sort of collaboration that is driving the New Economy. The resulting consortial organization will have the resources and mission that empowers it to create and disseminate solutions.

Endnotes

[1] Christensen, Clayton. *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail.* Boston: Harvard Business School Press, 1997.

Appendix A



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Abstract

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